

Quantification of neural crest contributions to the ventricular myocardium and regeneration

 Marianne E Bronner

Updated date: Dec 14, 2019

 An abbreviated version of this protocol was published in eLIFE in Aug 2019

Cardiac neural crest contributes to cardiomyocytes in amniotes and heart regeneration in zebrafish

DOI: 10.7554/eLife.47929

Detailed protocol

To quantify RIA-labeled cells in chick embryos, three consecutive sections of the same axial level were imaged per embryo. The number of YFP-positive cells was averaged to account for variability due to sampling. $n = 4-6$ embryos were analyzed at each stage as biological replicates. The results are presented as presence or absence of virally labeled cardiac neural crest derivatives at different anatomical locations in [Figure 1I](#) and as numerical values in [Supplementary file 1a, 1b](#). To quantify Wnt1-ZsGreen+ cells in E15.5 mouse heart, three consecutive sections of the same axial level were imaged per embryo ($n = 4$). Automated particle analysis was conducted with FIJI program to estimate the total number of ZsGreen+ cells in the image. For the percentage of neural crest-derived cells in the ventricle, the same procedure was performed with the DAPI channel which represents total cell population. % ZsGreen/DAPI was calculated, and averaged to the result presented in the text of [Supplementary file 1a](#). Same analysis was conducted to estimate the number of *sox10:eGFP*+ cells in 7dpa ($n = 3$), 21dpa ($n = 3$) and sham operated ($n = 3$) hearts in an area of $2 \times 10^5 \mu\text{m}^2$ at the apex. One section per heart at the middle of the apex was quantified and presented in [Supplementary file 1c](#).

How to cite: (Readers should cite both the Bio-protocol preprint and the original research article where this protocol was used)

1. Bronner, M. E.(2019). Quantification of neural crest contributions to the ventricular myocardium and regeneration. Bio-protocol Preprint. bio-protocol.org/prep140.
2. Tang, W., Martik, M. L., Li, Y. and Bronner, M. E.(2019). Cardiac neural crest contributes to cardiomyocytes in amniotes and heart regeneration in zebrafish. eLIFE. DOI: [10.7554/eLife.47929](https://doi.org/10.7554/eLife.47929)

Copyright: Content may be subjected to copyright.